

## Software Release Notice

**System:** MGS

**Release:** McMurdo 4.5.2

**Date:** September 18, 2002

### Modification Description:

McMurdo Station Upgrade

The following changes are planned for McMurdo Ground Station software. These modifications have been completed since the McMurdo4.5.1 release.

- ◆ Added the following debug messages to provide diagnostics for the uplink and the oscillation after stow:

#### **Example Output from uactask...**

```
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=110.123 (vector[110]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=111.123 (vector[111]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=112.123 (vector[112]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=113.123 (vector[113]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=114.123 (vector[114]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=115.123 (vector[115]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=116.123 (vector[116]=80)
DEBUG (UPL) Sep 13 19:33 32 (0) Transmit is allowed for El= 90.123, AZ=117.123 (vector[117]=80)
```

#### **Example Output from pedcont...**

```
DEBUG (PED) Sep 13 21:05 24 (0) Moving to Stow from Az=123.456 El=123.456 Tr=123.456
DEBUG (PED) Sep 13 21:05 24 (0) Stow Speed Used: Az= 7.0 El= 5.0 Travel Time:123.1
DEBUG (PED) Sep 13 21:05 24 (0) El/Az Stow Complete: Az=123.456 El=123.456 Tr=123.456,
Complete Time:123.1
```

- ◆ Changed the version to McMurdo 4.5.2.

The following changes are planned for McMurdo Ground Station software. These modifications have been completed since the McMurdo3.2 release.

- ◆ Received from MGS, and modified, working version of NasaStart.
- ◆ Removed task that would attempt to poll frequency counter and change frequency during an uplink when lock has already occurred.
- ◆ Fixes the 1000 configuration file list problem and allows for name entries up to 13 characters and description entries up to 31 characters.
- ◆ Sends upgrade acknowledge to the Master even if the Master is already upgraded.
- ◆ Changes the remote interface to match Wallops version 3.1.8 and beyond with additional debug.

The following changes are planned for McMurdo Ground Station software. These modifications have been completed since the McMurdo3.0 release.

- ◆ Correct the AGC UIF displays.
- ◆ Correct the control of the uplink and test exciters.
- ◆ Correct the ability to start and stop sweep.

- ◆ Clear the correct remote interface queue.
- ◆ Start the status\_l after starting all the ioh processes.
- ◆ Restores the shortened prepass feature to 45 seconds.
- ◆ Updates Version on GUI.
- ◆ Avoids queue overflows caused by status packets.

In addition, the following features from release 3.0 should also be validated:

These modifications have been completed since the McMurdo2.3 release.

1. Does not force the ACU to a WB or NB mode prior to a test. Leaves the ACU in whatever mode is currently set, prior to beginning Boresight Tests or Servo Tests.
2. Single Socket (Lien List Item #9)
3. Hot handover Uplink (Lien List Item #2) - Start button on top level highlights when uplink is configured to off. Hitting start button starts a non-coherent uplink.
4. Correct Train Axis Positioning (Lien List Item #15) - Changes system default setting of train axis from 30 degrees to 70 degrees.
5. Geo-Sync Satellite Tracking (Lien List Item #20)
6. Improves the 80 Hz resolution of frequency for uplink.
7. Configures Bit Sync names from the sysdfit.ascii file. Adds AQUA Bit Sync in slot 3.
8. Improve calculation of pedestal rates for program tracking at high rates.

#### **Files Affected:**

The files that were developed and/or utilized as part of MGS 4.5.2 are listed in Attachment 1: MGS 4.5.2 FILES.

#### **Hardware Requirements:**

N/A

#### **Validation Procedures:**

MGS 4.5.2 will provide diagnostics to determine the problems with uplink and overshoot on stow. It is to be temporarily installed on the base machine and then removed. Run uplink passes with debug enabled. Forward the message.files to ViaSat for review.

#### **Known Bugs or Limitations:**

## **Installation Procedure:**

CSOC staff will install the new release remotely. It will be necessary to coordinate the time of the update with the operator and with ViaSat for phone support.

Please perform the following installation and activation and/or restore instructions on the base McMurdo computers.

To install this release, first check to see that there is adequate disk space available by typing `bdf`. There should be at least 150MB available. If not, back-up to tape and then delete old unused releases in the `/home/aaas/releases` directory.

### **Install the Executables**

1. Create a `rel4.5.2` directory in the `/home/aaas/releases` directory.
2. Copy the file `mgs4.5.2_patch.Z` into this directory.
3. Copy all the `mgs4.5.1` files into this directory.
4. Uncompress `mgs4.5.2_patch.Z`
5. Untar `mgs4.5.2_patch`. This will copy over the executables for Nasa, pedcont, and uactask. Check those executables in the `bin` directory to make sure that they are newer than the executables from `rel4.5.1`.

NOTE: These installation procedures will replace release 3.0 with release `mgs4.5.2`. When finished, the system will be configured to allow for running of the old release (`mcm2.3`) and the new release (`mgs4.5.2`). This configuration will make the system appear as if release 3.0, release 3.2, and release 4.5.1 were never installed.

1. Make the following change(s) to the `.cshrc` file.

- `cd /home/aaas`
- `vi .cshrc`

```
setenv COPYETC_RELEASE mgs4.5.2
```

**NOTE: If it becomes necessary to revert back to the prior release this change must be undone. See the Restore Procedures section of this document.**

2. Create a new release directory:

- `mkdir /home/aaas/releases/mgs4.5.2`
- `cd /home/aaas/releases/mgs4.5.2`

3. Copy and Uncompress and untar the release:

- `Copy /home/aaas/releases/mgs4.5.1/bin/* bin/`
- `uncompress mgs4.5.2_patch.Z`
- `tar -xvf mgs4.5.2_patch`

This should create a `bin` directory populated with the new executables.

4. Copy the current `etc` directory:

- `cp -r /home/aaas/releases/mcm2.3/etc /home/aaas/releases/mgs4.5.2/`

5. For the purpose of regression, modify the links in /home/aaas/releasesmcm2.3/etc directory so they NO longer point at files in mcm3.0 but rather point to files in mgs4.5.2.

- `cd /home/aaas/releases/mcm2.3/etc`
- `rm ephtxt.txt`
- `ln -s /home/aaas/releases/mgs4.5.2etc/ephtxt.txt /home/aaas/releases/mcm2.3/etc/ephtxt.txt`
- `rm CurrentSchedule`
- `ln -s /home/aaas/releases/mgs4.5.2/etc/CurrentSchedule /home/aaas/releases/mcm2.3/etc/CurrentSchedule`
- `rm sysdflt.bin`
- `ln -s /home/aaas/releases/mgs4.5.2/etc/sysdflt.bin /home/aaas/releases/mcm2.3/etc/sysdflt.bin`
- `rm config`
- `ln -s /home/aaas/releases/mgs4.5.2/etc/config /home/aaas/releases/mcm2.3/etc/config`
- `rm log/tapeentry.log`
- `ln -s /home/aaas/releases/mgs4.5.2/etc/log/tapeentry.log /home/aaas/releases/mcm2.3/etc/log/tapeentry.log`
- `rm log/tapehdr.log`
- `ln -s /home/aaas/releases/mgs4.5.2/etc/log/tapehdr.log /home/aaas/releases/mcm2.3/etc/log/tapehdr.log`

6. Make a script that will allow for executing the mgs4.5.2 release:

- `cd /home/aaas`
- Use an editor to create an executable script named sw4.5.2. Its content should be:  
  
`rm /home/aaas/etc`  
`ln -s /home/aaas/releases/mgs4.5.2/etc /home/aaas/etc`  
`rm /home/aaas/bin`  
`ln -s /home/aaas/releases/mgs4.5.2/bin /home/aaas/bin`
- `chmod +x sw4.5.2`

7. Test the mgs4.5.2 release.

### **Activation Procedure:**

SCC 4.5.2 activation procedure (**must be installed with ATS 3.3 or later**):

(1) Select option "Exit" from the "Session" menu. This action will close the SCC graphical user interface (GUI) and stop all SCC processes. Processes are stopped after "Stopping rci" and "Removing Stale Message Queues" messages are displayed. Hit "enter" to display the SCC command prompt, "mgs >".

(2) Type "sw4.5.2" to switch to SCC release 4.5.2. Type "Start" to start the SCC processes. The SCC GUI main window will show "McMurdo 4.5.2".

### **Restore Procedure:**

SCC 2.3 restore procedure (**must be installed with a Master Release prior to ATS 3.3**):

(1) Select option "Exit" from the "Session" menu. This action will close the SCC graphical user interface (GUI) and stop all SCC processes. Processes are stopped after "Stopping rci", and "Removing Stale Message Queues" messages are displayed. Hit "enter" to display the SCC command prompt, "mgs >".

(2) Type "sw2.3" to switch back to SCC release 2.3. Type "Start" to start the SCC processes. The SCC GUI main window will show "NASA Version 2.3".

3) Make the following change(s) to the .cshrc file.

- cd /home/aaas
- vi .cshrc

```
setenv COPYETC_RELEASE mgs2.3
```

### **Documentation Affected:**

N/A

### **Comments:**

Perry Still will support this software installation from ViaSat and his number is (678) 924-2547. Also available for support is Norm Cushing at (678) 924-2545 and Scott Schaire at (678) 924-2637.

### **Approval:**

The software modifications described in this release notice has been validated and accepted.

\_\_\_\_\_  
NASA MGS Project Manager

\_\_\_\_\_  
Date

### **SOFTWARE RELEASED:**

The software modifications described in this release notice have been completed and released to ground station operations.

\_\_\_\_\_  
System Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
NASA Program Monitor

\_\_\_\_\_  
Date

## **Attachment 1**

### **MGS 4.5.2 Files**

#### **The bin Directory:**

Nasa  
pedcont  
uactask

#### **The etc Directory:**

N/A

#### **The etc/hpib directory:**

N/A

#### **The etc/config directory:**

N/A.